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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,076	12/16/2003	Kaoru Irie	Q78494	4257
23373	7590	11/16/2005		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER HARMON, CHRISTOPHER R	
			ART UNIT	PAPER NUMBER
			3721	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/736,076

Applicant(s)

IRIE ET AL.

Examiner

Christopher R. Harmon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/14/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/05 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "on the feed side" and "on the permeation side" in lines 3 and 4, respectively. There is insufficient antecedent basis for this limitation in the claim. Also "the membrane" (claim 1, lines 10 and 11) lacks proper antecedent basis because there is confusion whether it refers to the "folded membrane" or "unfolded membrane".

Furthermore "[[a]]" (line 9) is objected to as improper form of deletion. In addition, for purposes of increasing clarity method steps should be positively recited in claim 2.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bray et al. (US 4,842,736) in view of Solie et al. (US 5,681,467).

Bray et al. disclose a process for producing a spiral membrane element comprising forming a multilayer structure comprising multiple folded membranes spirally wound about a perforated core tube 18 (holes 20); the layers comprise various multilayered folded membrane "sandwiches" 13; see figures 3-4. Bray et al. form a sealing structure with leaves 12 and 16 for separating feed-side passages and permeation-side passages. The multilayer structure is considered a continuous membrane (cylindrical) with a pleated internal structure (formed from the folded membranes wound about core 18); see figures 1-2.

Bray et al. disclose providing an unfolded membrane 14 with feed-side passage material 46a and permeation-side passage material 48a; forming in the unfolded membrane a folding initiation part 51a; see figure 10. Bray et al. disclose heating and pressing the folding initiation part 51a for allowing for the material to melt in order to allow for a complete bend in the membrane without cracking, etc.

Bray et al. disclose subjecting the final product to pressure and temperature; see column 6 lines 7-11. The alternative embodiment shown in figure 12 shows folding the

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membrane during the folding procedure however do not disclose forming a folding initiation part along folding lines. Bray et al. do not directly disclose the folding procedure nor heating and pressing the membrane during and/or after the folding of the manufacture of the folded membrane, however Solie et al show the method of producing a spiral membrane element with a multilayer structure comprising a membrane 25a that is folded, a feed side passage material 30a disposed on the feed side of the folded membrane, and a permeation side passage material 12a. The folded membrane is heated with means and then pressed using compression dies (col 10 lines 10+). It would have been obvious to one of ordinary skill in the art to heat and press the membrane during the folding procedure as taught by Solie et al. in the invention to Bray et al. for further insuring a pliable/non-defective fold in the membrane.

### ***Response to Arguments***

6. Applicant's description of the interview of 10/26/05 is agreed with. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

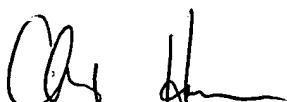
### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Harmon whose telephone number is (571) 272-4461. The examiner can normally be reached on Monday-Friday from 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on (571) 272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chris Harmon  
Patent Examiner